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Docket No. 10806-116

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Holly D. Kozlowski

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Applicant:	Theo T.M. Bogaert et al	:	Paper No.:
Serial No.:	09/777,510	:	Group Art Unit: 3764
Filing Date:	February 6, 2001	:	Examiner: D. D. Demille

For: **Intraocular Lenses**

TRANSMITTAL OF APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Submitted herewith in **triplicate** is an Appeal Brief in support of the Notice of Appeal filed by Certificate of Mailing on November 3, 2003 and received by the U.S. Patent and Trademark Office on November 6, 2003. The government fee in the amount of $330.00 for filing the present Appeal Brief should be charged to our Visa credit card. Form PTO-2038 is enclosed.

Please charge any additional fees required or credit any excess in fees paid in connection with the present communication to Deposit Account No. 04-1133.

Respectfully submitted,

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For: **Intraocular Lenses**

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The present Appeal Brief is submitted in support of the Notice of Appeal filed by Certificate of Mail on November 3, 2003 and received by the U.S. Patent and Trademark Office on November 6, 2003.

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is the assignee of the present application, Pharmacia Groningen BV.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to the Appellants, the Appellants' undersigned legal representative or the assignee which will directly effect or be directly effected by or having a bearing on the Board's decision in the present appeal.

III. STATUS OF THE CLAIMS

Claims 1-19, 21-23 and 25-54 are pending in this application. Claims 21-23, 35-47 and 51-54 have been allowed. Claims 20 and 24 have been cancelled. The remaining claims 1-19, 25-34, and 48-50 stand rejected and are the subject of the present appeal. A copy of these claims on appeal is set forth in the Appendix.

IV. STATUS OF AMENDMENT FILED SUBSEQUENT TO REJECTION ON APPEAL

No amendment to the claims was submitted subsequent to the final rejection set forth in the Official Action dated July 2, 2003.

V. SUMMARY OF THE INVENTION

The invention defined by rejected claims 1-19, 25-34 and 48-50 is directed to an intraocular correction lens adapted for implantation in the posterior chamber of an eye between the iris and the intact natural lens (claim 1), and to a kit of such lenses (claim 48).

More particularly, according to claim 1, the intraocular correction lens comprises a centrally located optical part capable of providing an optical correction and a peripherally located supporting element capable of maintaining said optical part in said central location. The optical part and said support element together have a concave posterior surface which is part of a non-spherical surface that is rotation symmetric around the optical axis of said optical part. Additionally, the intersection between said non-spherical surface and any plane containing the optical axis represents a flawless curve free from discontinuities and points of inflection.

According to claim 2, the flawless curve in the lens of claim 1 is at least extended in a direction towards the lens periphery within an area defined by the projection of a natural lens

in an eye in which the lens is adapted for implantation, on the posterior surface of said correction lens in a direction parallel to the optical axis.

Claims 3-5 depend directly from claim 2. According to claim 3, the flawless curve is at least extended in a direction towards the lens periphery within an area defined by the projection of the zonula-free natural lens on the posterior surface of said correction lens in a direction parallel to the optical axis. According to claim 4, the flawless curve has substantially the same extension as the width of the lens. According to claim 5, the supporting element comprises an inner part and a peripheral part designed so as to be at least partially in contact with a ciliary sulcus and zonulas in an eye in which the correction lens is adapted for implantation.

Claims 6-8, 26, 29 and 30 depend directly from claim 5. According to claim 6, the peripheral part is flawlessly connected to the inner part. According to claim 7, the peripheral part is connected to the inner part at a point of inflection. According to claim 8, the peripheral part follows a curve diverging towards a plane perpendicular to the optical axis. Claims 49 and 50 depend from claims 6 and 7, respectively, and similarly recite that the peripheral part follows a curve diverging towards a plane perpendicular to the optical axis.

According to claim 26, the peripheral part of the support means consists of two separate diametrically opposite, symmetrical parts, each provided with at least one peripherally located indentation of a generally concave shape extending inwards towards the inner part of the support means and the optical axis. Claims 27 and 28 depend from claim 26 and respectively recite that the indentation extends to the inner part of the support means, and the indentation has a depth of about 0.5 to 1.25 mm.

According to claim 29, the flawless curve extends along the inner part of the supporting element, and according to claim 30, the peripheral part of the support element is provided with a higher flexibility than the inner part.

Claim 9 recites that the central radius of the posterior surface of the optical part of the lens of claim 1 is adapted to be different from the central radius of a natural lens in an eye in which the correction lens is adapted for implantation, in a non-accommodated state. According to claim 10, the central radius of the posterior surface of the lens of claim 9 is substantially smaller than the central radius of the natural lens. Claim 11 recites that in the lens of claim 10, the central radius of the posterior surface is less than about 7 mm. According to claim 12, the central radius of the posterior surface of the lens of claim 9 is substantially larger than the central radius of the natural lens. Claim 13 recites that in the lens of claim 12, the central radius of the posterior surface is larger than about 14 mm. According to claim 14, the radius of the posterior surface of the lens of claim 9 increases from the central part towards the lens periphery. Further, according to claim 34, the maximum lens vault of the lens of claim 9 is sufficiently large so as to avoid contacts between the posterior surface and the natural lens in its accommodated state.

Claim 15 recites that the flawless curve in the lens of claim 1 comprises two or more tangentially attached circle segments. Claim 16 recites that in the lens of claim 15, the flawless curve comprises three tangentially attached circle segments. Claim 17 recites that in the lens of claim16, the three tangentially attached circle segments consist of a centrally located segment having a radius different from that of a natural lens in an eye in which the correction lens is adapted for implantation in its non-accommodated state and two peripheral segments. Claim 18 recites that in the lens of claim 17, the centrally located segment corresponds to the optical part and the peripheral segments correspond to the inner part of the support element. Finally, claim 19 recites that in the lens of claim 18, the three tangentially attached circle segments together approximate an ellipsoidal curve.

Claim 25 recites that the lens of claim 1 has a total diameter less than the average diameter of the ciliary sulcus.

Claim 31 recites that the optical part of the lens of claim 1 has a diameter of a size sufficient to avoid edge glare. Claims 32 and 33 depend from claim 31 and respectively recite that the optical part has a diameter of at least 5.5 mm, and the lens has an optical power larger than $\pm$15 diopters.

Finally, claim 48 recites a kit of intraocular lenses with a suitable variety of optical powers. Each individual lens is according to claim 1.

VI. ISSUES ON APPEAL

There are two issues on appeal for review by the Board:

A. The first issue on appeal is the rejection of claims 1-19, 25, 29-34 and 48-50 under 35 U.S.C. §103(a) as being unpatentable over the Feingold U.S. Patent No. 6,106,553 in view of the Wanders U.S. Patent No. 6,092,899.

B The second issue on appeal is the rejection of claims 26-28 under 35 U.S.C. §103(a) as being unpatentable over Feingold and Wanders and further in view of the Choyce U.S. Patent No. 4,414,694.

VII. GROUPING OF THE CLAIMS

A. With respect to the first issue on appeal noted above, Appellants submit that claims 2-19, 25 and 48-50 are independently patentable from claim 1 from which they directly or indirectly depend. Reasons in support of the independent patentability of these claims are set forth below.

B. With respect to the second issue on appeal noted above, Appellants submit that claims 27 and 28 are independently patentable from claim 26 from which they directly depend. Reasons in support of the independent patentability of these claims are set forth below.

VIII. ARGUMENTS

The intraocular correction lenses defined by claims 1-19, 25-34, 49 and 50 and the kit of intraocular lenses defined by claim 48 are nonobvious over and patentably distinguishable from Feingold in view of Wanders, even in further combination with Choyce. Accordingly, the rejections of the claims under 35 U.S.C. §103 should be reversed. Favorable action by the Board is respectfully requested.

A. Claims 1-19, 25, 29-34 and 48-50 are nonobvious over Feingold in view of Wanders

The intraocular correction lenses defined by claims 1-19, 25, 29-34, 49 and 50 and the kit of intraocular lenses defined by claim 48 are nonobvious over and patentably distinguishable from Feingold in view of Wanders. Accordingly, the rejection of these claims under 35 U.S.C. §103 should be reversed.

1. The Examiner's Position

The Examiner asserted that Feingold teaches a conventional concave intraocular lens and in Figure 17 details a non-spherical surface. The Examiner asserted that Wanders teaches at column 6, lines 15-19 that the transition between the distance part of the disclosed lens and the reading part of the lens is particularly gradual and image discontinuity and reflection will be avoided. The Examiner further asserted it is well recognized to provide a continuous surface free of any abrupt changes in the surface of the lens and it would have been obvious to modify Feingold, if not inherent, to provide a curved surface free from discontinuities and points of inflection as taught by Wanders so as to eliminate any discontinuities disrupting the natural progression of light through the lens (Official Action dated July 2, 2003, page 2).

2. The Claimed Lens is Nonobvious

As defined by claim 1, the intraocular correction lenses according to the invention are adapted for implantation in the posterior chamber of an eye between the iris and the intact natural lens. The inventive intraocular correction lens comprises a centrally located optical part capable of providing an optical correction, and a peripherally located supporting element capable of maintaining the optical part in the central location. The optical part and the support element *together* have a *concave posterior surface* which is part of a non-spherical surface that is rotation symmetric around the optical axis of the optical part. The intersection between the non-spherical surface and any plane containing the optical axis represents a flawless curve free from discontinuities and points of inflection. The kit of claim 48 comprises intraocular lenses according to claim 1, with a suitable variety of optical powers.

The lens of the invention is adapted for implantation in the posterior chamber of an eye between the iris and the intact natural lens and, thus, not in place of the natural lens. Accordingly, it is important that the lens is provided with a structure such that, when implanted, the lens resists damage to the natural lens. As set forth in the present specification, for example at page 1, lines 5-8, the present intraocular correction lens provides a more anatomical fit in the posterior chamber of the eye, thereby minimizing risks of disturbing the natural lens. As described in further detail at page 7, beginning at line 3, the inventive lens avoids local pressure points on the natural lens of an eye, as such pressure points can form stress concentration points or zones on the natural lens, which may impair the natural metabolism of the natural lens and form local opacifications, in turn leading to cataract formation and the need for surgical intervention. Thus, the intraocular correction lens adapted for implantation in the posterior chamber of an eye between the iris and the intact natural lens as presently claimed provides significant advantages. Importantly, the optical part and the support element *together*, i.e., not merely the optical part, have a *concave posterior surface* which is part of a non-spherical surface that is rotation symmetric around

the optical axis of the optical part. The intersection between the non-spherical surface and any plane containing the optical axis represents a flawless curve free from discontinuities and points of inflection.

Feingold discloses an artificial intraocular refractive correction lens which is implanted into an eye that has a natural crystalline lens. Feingold recognizes that contact between an implanted intraocular lens and the natural lens can result in cataract formation (Column 2, lines 64-66). However, Feingold's approach to preventing this undesirable effect is to provide a spacing between the posterior surface of the intraocular lens and the anterior surface of the natural lens. For example, at column 5, lines 4-8, Feingold discloses that at least a part of the posterior surface of the intraocular lens is separated from the anterior of the natural crystalline lens to form a spacing therebetween. At column 6, beginning at line 20, Feingold discloses that the small gap allows for flow of body fluids and minimizes friction. However, Appellants find no teaching, suggestion or recognition by Feingold regarding the surface design of the intraocular lens surfaces, particularly the posterior surface which faces the natural lens, or that such is important in reducing performance problems as discussed above.

Feingold Figure 17 referenced by the Examiner provides no such teaching, suggestion or recognition. In fact, Feingold does not provide a detailed description regarding the embodiment of Figs. 15-17, and at column 6, Feingold merely discloses that the detailed curvature of the intraocular refractive correction lens is shown in Figure 17. It appears from Figure 17 that at R8, a point of inflection is disclosed.

On the other hand, Wanders discloses multifocal contact lenses which rest on a cornea. Thus, Wanders is not directed to an intraocular lens and is not concerned with a design suitable for implantation adjacent to a natural crystalline lens. It is therefore not surprising that Appellants find no teaching or suggestion by Wanders relating to an

intraocular lens, particularly adapted for implantation between the iris and the intact natural lens, or relating to the design of a posterior surface of the lens.

The Wanders contact lenses are provided with two different optical parts, namely a reading part and a distance part. The distance part 4 and the reading part 5, comprising a recess are separated by transitions 8 and 9. At column 6, lines 15-19 referenced by the Examiner, Wanders teaches the transition between the distance part and the reading part is gradual so the eye will suffer little or no irritation and wearing comfort and image discontinuity and reflection will be avoided. However, as is evident from a review of Figs. 3 and 4 of Wanders, which represent perspective cross sectional and cross sectional views of the disclosed contact lens, the lens surface contains discontinuities and points of inflection in the recess 5. Thus, while Wanders desires a gradual transition between the two different optical areas, Wanders does not disclose a lens surface as presently claimed, and provides no suggestion or motivation for modifying a posterior surface of the intraocular lens of Feingold.

The Examiner appears to be of the opinion that a posterior surface as presently claimed solves a problem of image quality or minimizes optical problems, which appear to be concerns of the contact lens of Wanders. However, the present invention defines the posterior surface of the optical part and the support element *together*, i.e., not merely the optical part. Contact lenses as disclosed by Wanders do not have the peripherally located support elements that are needed in intraocular lens implants to ensure correct positioning of the lens in the eye. Thus, any teachings of Wanders relating to vision improvement in an optical part is not relevant to the support member of Feingold. Simply put, any teachings of Wanders relating to an anterior surface of an optical portion are not relevant to the design of the combined posterior surface of the optical part and the support element of Feingold.

On the other hand, while Feingold acknowledges that it is important to minimize interaction between a natural lens and an intraocular lens implant in the posterior chamber of

the eye, Feingold suggests a different technical solution to overcome the problem, namely a spacing. Accordingly, one of ordinary skill in the art would have no reason to modify the intraocular lens of Feingold as the spacing provided by the Feingold design is disclosed as overcoming the problem of natural lens contact. Thus, one of ordinary skill in the intraocular lens implant art would have no reason to look to the teachings of Wanders, which relate to different devices and different technical problems and which provide no teaching as to the posterior surface of the contact lens. Moreover, one of ordinary skill in the intraocular lens implant art would find no suggestion from such teachings to modify the posterior surface of both the optical portion and the support portion of the Feingold lens. Thus, Feingold and Wanders are not properly combinable to render the presently claimed intraocular correction lens obvious.

In order to render a claimed invention obvious, prior art must enable one skilled in the art to make and use the claimed invention, *Motorola, Inc. v. Interdigital Tech. Corp.*, 43 U.S.P.Q.2d 1481, 1489 (Fed. Cir. 1997). Moreover, the mere fact that it is possible to find two isolated disclosures which might be combined in such a way to produce a claimed invention does not necessarily render such a combination obvious unless the prior art also contains something to suggest the desirability of the proposed combination, *In re Grabiak*, 226 U.S.P.Q. 870, 872 (Fed. Cir. 1985). In view of the deficiencies in the teachings of Feingold and Wanders as discussed above, these references in combination do not enable one of ordinary skill in the art to make and use the presently claimed intraocular correction lens and do not suggest any desirability of the combinations of teachings proposed by the Examiner. Accordingly, these references do not support a rejection of claims 1-19, 25, 29-34, and 48-50 under 35 U.S.C. §103. It is therefore submitted that the intraocular correction lenses defined by claims 1-19, 25, 29-34, 49 and 50 and the kits defined by claim 48 are

nonobvious over and patentably distinguishable from Feingold and Wanders, whereby the rejection under 35 U.S.C. §103 should be reversed.

3. Claims 2-8, 29, 30, 49 and 50 are Independently Patentable

Claims 2-8, 29, 30, 49 and 50 are independently patentable from the combination of Feingold and Wanders.

According to claim 2, the flawless curve in the lens of claim 1 is at least extended in a direction towards the lens periphery within an area defined by the projection of a natural lens in an eye in which the lens is adapted for implantation, on the posterior surface of said correction lens in a direction parallel to the optical axis.

Claims 3-5 depend directly from claim 2. According to claim 3, the flawless curve is at least extended in a direction towards the lens periphery within an area defined by the projection of the zonula-free natural lens on the posterior surface of said correction lens in a direction parallel to the optical axis. According to claim 4, the flawless curve has substantially the same extension as the width of the lens. According to claim 5, the supporting element comprises an inner part and a peripheral part designed so as to be at least partially in contact with a ciliary sulcus and zonulas in an eye in which the correction lens is adapted for implantation.

Claims 6-8, 29 and 30 depend directly from claim 5. According to claim 6, the peripheral part is flawlessly connected to the inner part. According to claim 7, the peripheral part is connected to the inner part at a point of inflection. According to claim 8, the peripheral part follows a curve diverging towards a plane perpendicular to the optical axis. Claims 49 and 50 depend from claims 6 and 7, respectively, and similarly recite that the peripheral part follows a curve diverging towards a plane perpendicular to the optical axis.

According to claim 29, the flawless curve extends along the inner part of the supporting element, and according to claim 30, the peripheral part of the support element is provided with a higher flexibility than the inner part.

Thus, each of claims 2-8, 29, 30, 49 and 50 further define specific characteristics of the concave posterior surface of the optical part and the support element, particularly relating to the flawless curve formed by the intersection between said non-spherical surface and any plane containing the optical axis and, in claims 5-8, 29 and 30, further relating to the support element. Appellants find no teaching or suggestion by either Feingold or Wanders relating to the specific limitation of these claims. The mere reference by Wanders to a smooth transition between a distance part and a reading part on a contact lens provides one of ordinary skill in the art with no teaching or suggestion of an intraocular lens optical part and support element posterior surface flawless curve as recited in claim 2, extended in a direction towards the lens periphery within an area defined by the projection of a natural lens in an eye in which the lens is adapted for implantation, on the posterior surface of said correction lens in a direction parallel to the optical axis. Similarly, Appellants find no teaching of such a flawless curve as defined in claim 3, at least extended in a direction towards the lens periphery within an area defined by the projection of the zonula-free natural lens on the posterior surface of said correction lens in a direction parallel to the optical axis, or as defined in claim 4, having substantially the same extension as the width of the lens.

Further, Appellants find no teaching of a lens as defined by claim 5, wherein the flawless curve features of claim 2 are required in combination with a supporting element comprising an inner part and a peripheral part designed so as to be at least partially in contact with a ciliary sulcus and zonulas in an eye in which the correction lens is adapted for implantation. As the teachings of Wanders relate to the optical portion of a contact lens, Wanders provides no teaching or suggestion to one of ordinary skill in the art relative to these

more specific features of the posterior surface of an optical part and supporting element of an intraocular lens.

Accordingly, Appellants find no teaching or suggestion in either Feingold or Wanders relating to the support elements further defined by claim 6, wherein the peripheral part is flawlessly connected to the inner part, or according to claim 7, wherein a peripheral part is connected to the inner part at a point of inflection, with the inner part and the optical part forming the posterior surface flawless curve. Similarly, Appellants find no teaching or suggestion of any such lenses wherein the peripheral part follows a curve diverging towards a plane perpendicular to the optical axis, as required by claims 8, 49 and 50.

Finally, Appellants find no teaching or suggestion by Feingold or Wanders of a lens according to claim 5, wherein the flawless curve extends along the inner part of the supporting element as required by claim 29, or wherein the peripheral part of the support element is provided with a higher flexibility than the inner part as required by claim 30.

To establish a prima facie case of obviousness, the prior art references when combined must teach or suggest all the claim limitations. M.P.E.P. §2143. However, Appellants find no teaching or suggestion in either Feingold or Wanders relating to the features of claims 2-8, 29, 30, 49 or 50, and the Examiner has not indicated where these claim limitations are taught. Thus, the Examiner has not established a prima facie case of obviousness, and the rejection of claims 2-8, 29, 30, 49 and 50 under 35 U.S.C. §103 should be reversed.

4. Claims 9-14 and 34 are Independently Patentable

Claims 9-14 and 34 are independently patentable from the combination of Feingold and Wanders.

Claim 9 recites that the central radius of the posterior surface of the optical part of the lens of claim 1 is adapted to be different from the central radius of a natural lens in an eye in

which the correction lens is adapted for implantation, in a non-accommodated state. According to claim 10, the central radius of the posterior surface of the lens of claim 9 is substantially smaller than the central radius of the natural lens. Claim 11 recites that in the lens of claim 10, the central radius of the posterior surface is less than about 7 mm. According to claim 12, the central radius of the posterior surface of the lens of claim 9 is substantially larger than the central radius of the natural lens. Claim 13 recites that in the lens of claim 12, the central radius of the posterior surface is larger than about 14 mm. According to claim 14, the radius of the posterior surface of the lens of claim 9 increases from the central part towards the lens periphery. Further, according to claim 34, the maximum lens vault of the lens of claim 9 is sufficiently large so as to avoid contacts between the posterior surface and the natural lens in its accommodated state.

While Appellants find teachings in Feingold relating to the radius of the intraocular lens body portion, distinct from the optic portion, Appellants find no teaching in Feingold, and the Examiner has not specified any such teaching, relating to any of the limitations of claims 9-14 regarding the differences in the central radius of the posterior surface of the optical part as compared with the central radius of a natural lens in an eye in which the correction lens is adapted for implantation, in a non-accommodated state. Further, Appellants find no teaching in Feingold of a lens wherein, despite the posterior surface flawless curve, has a maximum lens vault sufficiently large so as to avoid contacts between the posterior surface and the natural lens in its accommodated state, as required by claim 34. To the contrary, Feingold teaches obtaining this feature by a lens design including inflection points in the posterior surface, as in Figure 17. The contact lenses disclosed by Wanders do not resolve these deficiencies.

As noted, to establish a prima facie case of obviousness, the prior art references when combined must teach or suggest all the claim limitations. M.P.E.P. §2143. However,

Appellants find no teaching or suggestion in either Feingold or Wanders relating to the features of claims 9-14 or 34, and the Examiner has not indicated where these claim limitations are taught. Thus, the Examiner has not established a prima facie case of obviousness, and the rejection of claims 9-14 and 34 under 35 U.S.C. §103 should be reversed.

5. Claims 15-19 are Independently Patentable

Claims 15-19 are independently patentable from the combination of Feingold and Wanders.

Claim 15 recites that the flawless curve in the lens of claim 1 comprises two or more tangentially attached circle segments. Claim 16 recites that in the lens of claim 15, the flawless curve comprises three tangentially attached circle segments. Claim 17 recites that in the lens of claim16, the three tangentially attached circle segments consist of a centrally located segment having a radius different from that of a natural lens in an eye in which the correction lens is adapted for implantation in its non-accommodated state and two peripheral segments. Claim 18 recites that in the lens of claim 17, the centrally located segment corresponds to the optical part and the peripheral segments correspond to the inner part of the support element. Finally, claim 19 recites that in the lens of claim 18, the three tangentially attached circle segments together approximate an ellipsoidal curve.

Appellants simply find no teaching in Feingold, and the Examiner has not specified any such teaching, relating to any of the limitations of claims 15-19 regarding curvature of the posterior surface of the lens. Moreover, the Wanders reference to a smooth transition between a distance part and a reading part of a contact lens does not teach or suggest the limitations of claims 15-19. Thus, the contact lenses disclosed by Wanders do not resolve these deficiencies.

As noted, to establish a prima facie case of obviousness, the prior art references when combined must teach or suggest all the claim limitations. M.P.E.P. §2143. However, Appellants find no teaching or suggestion in either Feingold or Wanders relating to the features of claims 15-19, and the Examiner has not indicated where these claim limitations are taught. Thus, the Examiner has not established a prima facie case of obviousness, and the rejection of claims 15-19 under 35 U.S.C. §103 should be reversed.

6. Claim 25 is Independently Patentable

Claims 25 is independently patentable from the combination of Feingold and Wanders.

Claim 25 recites that the lens of claim 1 has a total diameter less than the average diameter of the ciliary sulcus. Appellants find no such teaching by Feingold and, to the contrary, from Figs. 26-28 of Feingold, it appears that the Feingold lenses extend well into the ciliary sulcus. The contact lenses disclosed by Wanders do not resolve this deficiency. Thus, the Examiner has not established a prima facie case of obviousness, and the rejection of claim 25 under 35 U.S.C. §103 should be reversed.

7. Claims 31-33 are Independently Patentable

Claims 31-33 are independently patentable from the combination of Feingold and Wanders.

Claim 31 recites that the optical part of the lens of claim 1 has a diameter of a size sufficient to avoid edge glare. Claims 32 and 33 depend from claim 31 and respectively recite that the optical part has a diameter of at least 5.5 mm, and the lens has an optical power larger than $\pm$15 diopters.

Feingold discloses various lens dimensions in Figs. 7 and 14. However, Appellants find no teaching or suggestion of an optical part having a diameter of a size sufficient to avoid edge glare as in claim 31, and particularly having a diameter of at least 5.5 mm as in

claim 32, or having a diameter of a size sufficient to avoid edge glare in a lens having an optical power larger than ±15 diopters as in claim 33. The contact lenses disclosed by Wanders do not resolve these deficiencies. Thus, the Examiner has not established a prima facie case of obviousness, and the rejection of claims 31-33 under 35 U.S.C. §103 should be reversed.

8. Claim 48 is Independently Patentable

Claim 48 is independently patentable from the combination of Feingold and Wanders.

Claim 48 recites a kit of intraocular lenses with a suitable variety of optical powers. Each individual lens is according to claim 1. Appellants find no teaching or suggestion of a kit as defined by claim 48 by Feingold or Wanders. Thus, the Examiner has not established a prima facie case of obviousness, and the rejection of claim 48 under 35 U.S.C. §103 should be reversed.

B. Claims 26-28 are Nonobvious over Feingold in view of Wanders and Choyce

The intraocular correction lenses defined by claims 26-28 are nonobvious over and patentably distinguishable from Feingold in view of Wanders and Choyce. Accordingly, the rejection of these claims under 35 U.S.C. §103 should be reversed.

1. The Examiner's Position

The Examiner relied on Choyce as disclosing a peripheral part with a generally concave portion. The Examiner asserted it would have been obvious to further modify Feingold and shape the peripheral part with a generally concave portion as taught by Choyce to minimize obstructions and reduce the amount of material used.

2. The Claimed Lens is Nonobvious

According to claim 26, the peripheral part of the support means of the lens of claim 5 consists of two separate diametrically opposite, symmetrical parts, each provided with at least one peripherally located indentation of a generally concave shape extending inwards towards

the inner part of the support means and the optical axis. Claims 27 and 28 depend from claim 26 and respectively recite that the indentation extends to the inner part of the support means, and the indentation has a depth of about 0.5 to 1.25 mm.

The deficiencies of Feingold and Wanders discussed in detail above with respect to claims 1, 2 and 5, from which claims 26-28 depend, apply equally well to the lenses of claims 26-28 and are not resolved by Choyce. That is, Choyce discloses an intraocular lens formed entirely of a polysulfone plastics material. However, Appellants find no teaching or suggestion by Choyce relating to the shape of the posterior surface of the lens and, as shown in Fig. 2, the posterior surface of the choice lens contains multiple points of inflection. Thus, Choyce does not resolve the deficiencies of Feingold or Wanders.

Moreover, the lens of claim 26 not only comprises a peripheral part of the support means consisting of two separate diametrically opposite, symmetrical parts, but requires that the support element together with an optical part have a concave posterior surface as claimed. Appellants find no such teaching by Choyce.

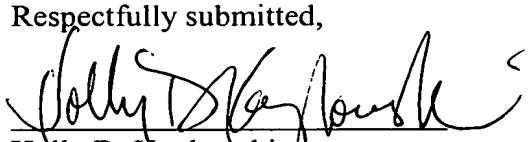
The lenses of claims 27 and 28 further require that the indentation extends to the inner part of the support means and the indentation has a depth of about 0.5 to 1.25 mm, respectively. Again, Appellants find no such teaching by Choyce.

As noted, to establish a prima facie case of obviousness, the prior art references when combined must teach or suggest all the claim limitations. M.P.E.P. §2143. In view of the deficiencies in the teachings of Choyce, Feingold and Wanders, the Examiner has not established a prima facie case of obviousness, and the rejection of claims 26-28 under 35 U.S.C. §103 should be reversed.

IV. CONCLUSIONS

The intraocular correction lenses defined by claims 1-19, 25-34, 49 and 50 and the kit of intraocular lenses defined by claim 48 are nonobvious over and patentably distinguishable from Feingold in view of Wanders, even in further combination with Choyce. Accordingly, the rejections of the claims under 35 U.S.C. §103 should be reversed. Favorable action by the Board is respectfully requested.

Respectfully submitted,



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APPENDIX

1. An intraocular correction lens adapted for implantation in the posterior chamber of an eye between the iris and the intact natural lens, comprising a centrally located optical part capable of providing an optical correction and a peripherally located supporting element capable of maintaining said optical part in said central location, wherein said optical part and said support element together have a concave posterior surface which is part of a non-spherical surface that is rotation symmetric around the optical axis of said optical part, wherein the intersection between said non-spherical surface and any plane containing the optical axis represents a flawless curve free from discontinuities and points of inflection.

2. A correction lens according to claim 1, wherein the flawless curve is at least extended in a direction towards the lens periphery within an area defined by the projection of a natural lens in an eye in which the lens is adapted for implantation, on the posterior surface of said correction lens in a direction parallel to the optical axis.

3. A correction lens according to claim 2, wherein the flawless curve is at least extended in a direction towards the lens periphery within an area defined by the projection of the zonula-free natural lens on the posterior surface of said correction lens in a direction parallel to the optical axis.

4. A correction lens according to claim 2, wherein the flawless curve has substantially the same extension as the width of the lens.

5. A correction lens according to claim 2, wherein the supporting element comprises an inner part and a peripheral part designed so as to be at least partially in contact

with a ciliary sulcus and zonulas in an eye in which the correction lens is adapted for implantation.

6. A correction lens according to claim 5, wherein the peripheral part is flawlessly connected to the inner part.

7. A correction lens according to claim 5, wherein the peripheral part is connected to the inner part at a point of inflection.

8. A correction lens according to claim 5, wherein the peripheral part follows a curve diverging towards a plane perpendicular to the optical axis.

9. A correction lens according to claim 1, wherein the central radius of the posterior surface of the optical part is adapted to be different from the central radius of a natural lens in an eye in which the correction lens is adapted for implantation, in a non-accommodated state.

10. A correction lens according to claim 9, wherein the central radius of the posterior surface is substantially smaller than the central radius of the natural lens.

11. A correction lens according to claim 10, wherein the central radius of the posterior surface is less than about 7 mm.

12. A correction lens according to claim 9, wherein the central radius of the posterior surface is substantially larger than the central radius of the natural lens.

13. A correction lens according to claim 12, wherein the central radius of the posterior surface is larger than about 14 mm.

14. A correction lens according to claim 9, wherein the radius of the posterior surface increases from the central part towards the lens periphery.

15. A correction lens according to claim 1, wherein the flawless curve comprises two or more tangentially attached circle segments.

16. A correction lens according to claim 15, wherein the flawless curve comprises three tangentially attached circle segments.

17. A correction lens according to claim 16, wherein the three tangentially attached circle segments consist of a centrally located segment having a radius different from that of a natural lens in an eye in which the correction lens is adapted for implantation in its non-accommodated state and two peripheral segments.

18. A correction lens according to claim 17, wherein the centrally located segment corresponds to the optical part and the peripheral segments correspond to the inner part of the support element.

19. A correction lens according to claim 18, wherein the three tangentially attached circle segments together approximate an ellipsoidal curve.

25. A correction lens according to claim 1, having a total diameter less than the average diameter of the ciliary sulcus.

26. A correction lens according to claim 5, wherein the peripheral part of the support means consists of two separate diametrically opposite, symmetrical parts, each provided with at least one peripherally located indentation of a generally concave shape extending inwards towards the inner part of the support means and the optical axis.

27. A correction lens according to claim 26, wherein the indentation extends to the inner part of the support means.

28. A correction lens according to claim 26, wherein the indentation has a depth of about 0.5 to 1.25 mm.

29. A correction lens according to claim 5, wherein the flawless curve extends along the inner part of the supporting element.

30. A correction lens according to claim 5, wherein the peripheral part of support element is provided with a higher flexibility than the inner part.

31. A correction lens according to claim 1, wherein the optical part has a diameter of a size sufficient to avoid edge glare.

32. A correction lens according to claim 31, wherein the optical part has a diameter of at least 5.5 mm.

33. A correction lens according to claim 31 having an optical power larger than ± 15 diopters.

34. A correction lens according to claim 9, wherein the maximum lens vault is sufficiently large so as to avoid contacts between the posterior surface and the natural lens in its accommodated state.

48. A kit of intraocular lenses with a suitable variety of optical powers, wherein each individual lens is according to claim 1.

49. A correction lens according to claim 6, wherein the peripheral part follows a curve diverging towards a plane perpendicular to the optical axis.

50. A correction lens according to claim 7, wherein the peripheral part follows a curve diverging towards a plane perpendicular to the optical axis.